

## **ABSTRACT**

There is described a method for determining a mechanical axis of a femur using a computer aided surgery system having an output device for displaying said mechanical axis, the method comprising: providing a position sensing system having a tracking device capable of registering instantaneous position readings and attaching the tracking device to the femur; locating a center of a femoral head of the femur by moving a proximal end of the femur to a first static position, acquiring a fixed reading of the first static position, repeating the moving and the acquiring for a plurality of static positions; and locating the centre by determining a central point of a pattern formed by the plurality of static positions; digitizing an entrance point of the mechanical axis at a substantially central position of the proximal end of the femur; and joining a line between the entrance point and the center of rotation to form the mechanical axis.